

STUDIES OF THE GYPONINAE: A SYNOPSIS OF THE GENUS *ACUSANA* DELONG

(HOMOPTERA: CICADELLIDAE)^{1, 2}

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ABSTRACT

All known species of *Acusana* are reviewed, including illustrations of the genital structures and a key to the species. Twenty eight species are included in the genus and 16 of these are described as new to science. The known geographical distribution of each species is also indicated.

The genus *Acusana* (Type, *Acusana veprecula* DeLong) was described by DeLong (1942) to include 10 southwestern United States species, 9 of which were described as new to science.

The present study of Central and South American specimens has revealed 16 new species which are described and illustrated at this time. This paper also brings together all known species of *Acusana* with a key for their separation.

Two species from Colombia, *A. pulchra* (Spangberg) and *A. vitticollis* (Spangberg), are known only from the female types and cannot be distinguished from the other species. One other species, *A. nigromarginata* Metcalf and Bruner has been transferred to the genus *Gypona* by DeLong and Freytag (1964).

The genus *Acusana* contains small- to medium-sized yellowish forms with the crown flattened and the anterior margin thin and often foliaceous. Wing venation simple, usually inconspicuous. Apex of male pygofer usually bears protruding hooked spines or flattened plates.

The species of *Acusana* occur primarily from Panama to the southwestern part of the United States. Only 5 species are known to occur outside this area; 3 from South America and 2 from Jamaica.

KEY TO SPECIES

(males only)

- | | | |
|---------|---|----------------|
| 1 | Aedeagus with laterally projecting terminal processes | 6 |
| 1' | Aedeagus without laterally projecting terminal processes | 2 |
| 2 (1') | Style widest just before blunt apex (fig. 25), aedeagus with an enlarged head-like apex (fig. 22) | <i>solora</i> |
| 2' | Style narrowed just before apex, aedeagus tapered and pointed at apex | 3 |
| 3 (2') | Aedeagus with a pair of blunt tubercles on sides at two-thirds its length (fig. 12) | <i>paga</i> |
| 3' | Aedeagus without tubercles on sides | 4 |
| 4 (3') | Style abruptly and deeply excavated on dorsal surface near apex, apex sharply pointed (fig. 19) | <i>vulgara</i> |
| 4' | Style broadly and shallowly excavated near apex, apex not sharply pointed | 5 |
| 5 (4') | Aedeagus broad at base and tapered to a slender pointed apex (fig. 3) | <i>profusa</i> |
| 5' | Aedeagus with sides parallel for more than two-thirds its length, then tapering to a pointed apex (fig. 8) | <i>rara</i> |
| 6 (1) | Aedeagus with one pair of terminal processes | 10 |
| 6' | Aedeagus with two pairs of terminal processes, or one pair with several lateral spines | 7 |
| 7 (6') | Aedeagus with one pair of terminal processes with several additional spine-like processes at two-thirds its length (fig. 77 and 78) | <i>munda</i> |
| 7' | Aedeagus with two distinct pairs of terminal processes | 8 |
| 8 (7') | Aedeagus with the two pairs of processes parallel in lateral view (fig. 63) | <i>lurora</i> |

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8'	Aedeagus with the two pairs of processes not parallel (fig. 73).....	9
9 (8')	Style gradually tapered and curved on apical fourth.....	<i>aperta</i>
9'	Style abruptly bent and sharply narrowed on apical fourth (fig. 75).....	<i>aptera</i>
10 (6)	Pygofer with protruding apical process concave or notched on inner surface (fig. 34) ..	11
10'	Pygofer with protruding apical process broadly rounded, not notched or concave on inner surface (fig. 30).....	16
11 (10)	Aedeagus blade-like, very broad laterally, one-third as broad as long (fig. 120).....	<i>frondosa</i>
11'	Aedeagus tubular.....	12
12 (11')	Style with apical half gradually tapered to a long pointed apex (fig. 35).....	<i>tereta</i>
12'	Style with apical half enlarged and then constricted just before apex (fig. 112).....	13
13 (12')	Pygofer with apical process short, broad, and bluntly rounded (fig. 106).....	<i>tympana</i>
13'	Pygofer with apical process slender, curved, and finger-like (fig. 113).....	14
14 (13')	Aedeagus with terminal processes short, slender, and inconspicuous (fig. 111).....	<i>prostrata</i>
14'	Aedeagus with terminal processes long, wide, and conspicuous (fig. 114).....	15
15 (14')	Size small, not exceeding 8 mm.; aedeagus with terminal processes more than one-third as long as shaft (fig. 114).....	<i>generosa</i>
15'	Size large, more than 8 mm.; aedeagus with terminal processes one-fourth the length of shaft (fig. 117).....	<i>veprecula</i>
16 (10')	Style with a short, rather abrupt, rounded protrusion on outer margin near middle.....	17
16'	Style broadly rounded, without abrupt rounded protrusion.....	18
17 (16)	Aedeagus with lateral processes one-third the length of shaft (fig. 108).....	<i>meditabunda</i>
17'	Aedeagus with lateral processes extending basally about one-half the length of shaft (fig. 93).....	<i>rota</i>
18 (16')	Aedeagus with lateral processes less than one-fourth the length of shaft (fig. 37).....	19
18'	Aedeagus with lateral processes one-third or more the length of shaft (fig. 52).....	21
19 (18)	Style in lateral view narrow, apical half almost parallel sided to near apex (fig. 39).....	<i>turba</i>
19'	Style in lateral view wide, not parallel sided.....	20
20 (19')	Style in lateral view with apical half gradually tapered to a slender, sharply pointed apex (fig. 29).....	<i>marginella</i>
20'	Style in lateral view with apical half strongly rounded on ventral margin, then slightly notched and sharply tapered to a blunt apex (fig. 124).....	<i>condensa</i>
21 (18')	Aedeagus with lateral processes extending halfway or more the length of shaft (fig. 52).....	22
21'	Aedeagus with lateral processes extending about one-third the length of shaft (fig. 47).....	23
22 (21)	Pygofer process gradually narrowed to apex (fig. 54).....	<i>aurella</i>
22'	Pygofer process bulb-like (fig. 60).....	<i>prona</i>
23 (21')	Style thick and broadly convex on ventral margin (fig. 91).....	<i>teres</i>
23'	Style not as above.....	24
24 (23')	Style with apex sharply angled (fig. 45).....	25
24'	Style with apex nearly straight (fig. 101).....	<i>insignita, fastigor</i>
25 (24')	Pygofer process truncate at apex (fig. 44).....	<i>hebeta</i>
25'	Pygofer process rounded at apex (fig. 50).....	<i>convesta</i>

Acusana solora sp. n.

(Figs. 22-26)

Resembling *insignita* in form and appearance but with distinct male genital structures. Length of male 7.5 mm.

Crown produced, rounded, blunt at middle, more than half as long at middle as basal width between eyes.

Color.—Orange yellow with faint longitudinal orange stripes on crown and pronotum. Crown with narrow black line on margin.

Genitalia.—Male plates four times as long as broad, only slightly narrowed at apex and broadly rounded. Style with apical half narrow at base, widened by a broadly curved ventral margin which abruptly curves to dorsal margin forming a broad pointed tip. Aedeagus enlarged near base in lateral view, then narrowed and bent strongly dorsally, forming a blunt rounded "Head" at tip with a basal spine on each side. Pygofer narrowed at apex and bearing a short, terminal, upturned process which is pointed dorsally.

Holotype male.—Mexico City, D. F., Sept. 13, 1939, DeLong and Plummer. Holotype in the DeLong Collection.

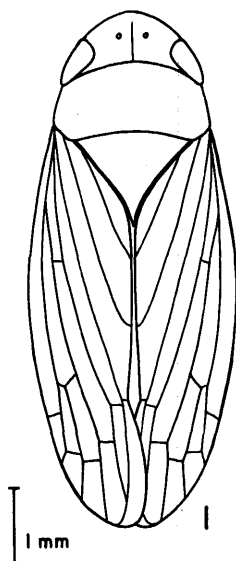
***Acusana paga* sp. n.**

(Figs. 1, 12–16, and 82)

Resembling *aurella* in form and appearance but with distinct male genital structures. Length of male 7 mm, female 8 mm.

Crown produced and rounded, almost three-fourths as long at middle as basal width between eyes.

Color.—Golden yellow tinted with brown, a narrow black line on margin of crown, and a narrow yellow border above margin and along lateral margins of pronotum. Costal area of forewings paler, yellowish.



PAGA

FIGURE 1. *Acusana paga* sp. n., dorsal view of adult.

Genitalia.—Female seventh sternum with posterior margin broadly, shallowly, concavely emarginate between the lateral angles. Male plates three times as long as broad, apical half tapered to form a rounded, blunt apex. Style with apical half in form of a slight reverse S-curve, broadest at middle, apical third curving dorsally and tapered to a pointed apex. Aedeagus, in lateral view, broadened on median half, then gradually narrowed to a slender, blunt apex; in ventral view shaft appears rather broad with a short, rounded tubercle on each side at three-fourths its length. Pygofer narrowed at apex and rounded.

Holotype male.—Mojinga Swp., Panama, C. Z., Nov. 20, 1951, F. S. Blanton, collector. Allotype female.—Patino Pt., Panama, C. Z., Aug. 10, 1952, F. S. Blanton, collector. **Paratypes.**—17 males and females, Gatun Lake, Panama, 1931, Tres Rios Plantation, T. O. Zachokke, collector, E. P. Van Duzee Collection; 5 males, Patino Pt., Panama, Sept. 14, 1952, F. S. Blanton,

collector; 2 females, Potrerillos, Panama, June 1935; 15 males and females, same data as holotype; 50 males and females, Patino Pt., Panama, C. Z., Aug. 10, 1952, Sept. 2, 1952, or Aug. 22, 1954, F. S. Blanton. Holotype (USNM type 67392), allotype, and paratypes in the U. S. National Museum Collection. Also paratypes in the North Carolina State College Collection, the California Academy of Science Collection, and the DeLong Collection.

Remarks.—Some 325 specimens have been examined from Panama and the Canal Zone.

***Acusana vulgara* sp. n.**

(Figs. 17–21)

Resembling *profusa* in form and color but with distinct male genital structures. Length of male 7 mm.

Crown broadly produced, a little more than half as long at middle as basal width between eyes.

Color.—Orange yellow tinted with brown. A narrow black line on margin of crown. Costal margin of forewings yellowish subhyaline.

Genitalia.—Male plates three times as long as wide, apical portion tapered to form a narrow, rounded tip. Style with apical half narrow, slightly curved and parallel margined to near apex where it is deeply, roundedly notched on dorsal margin forming a narrow, pointed apex which is bent dorsally. Aedeagus broad at base; in lateral view, tapered on apical half to a narrow, blunt apex; in ventral view, the tubular shaft appears open on apical half. Pygofer narrowed to a blunt, rounded apex.

Holotype male.—Mindi Dairy, Canal Zone, Dec. 5, 1951, F. S. Blanton, collector. Holotype in the U. S. National Museum Collection (USNM type 67389).

***Acusana profusa* sp. n.**

(Figs. 2–6)

Resembling *marginella* in general form but appearing more robust and with distinct male genital structures. Length of male 7 mm.

Crown broadly produced, one and one-half times as wide between eyes at base as median length.

Color.—Dull yellow tinged with brown; a black line on margin of crown and a red spot surrounding each ocellus. Costal area of forewings subhyaline.

Genitalia.—Male plates three times as long as broad, apical third narrowed to form a narrow, rounded tip. Style elongate, rather narrow, apical half abruptly curved and narrowed just before bluntly pointed apex. Aedeagus, in lateral view, broad at base, gradually narrowed to a pointed apex, ventral portion broadened and flat, dorsal edge thin. Pygofer narrowed at apex, roundedly notched on dorsal surface just before blunt, rounded apex.

Holotype male.—Mojinga Swp., Panama, C. Z., Sept. 5, 1951, F. S. Blanton, collector. Holotype in the U. S. National Museum Collection (USNM type 67387).

***Acusana rara* sp. n.**

(Figs. 7–11)

Resembling *aurella* in form and appearance but with distinct male genital structures. Length of male 7 mm.

Crown produced and broadly rounded, more than one and one-half times as wide between eyes at base as median length.

Color.—Orange yellow tinted with brown. Narrow black line on margin of crown. Inner apical margin of forewing smoky.

Genitalia.—Male plates three and one-half times as long as broad, apical half tapered to form a narrow blunt apex. Style with apical half almost parallel margined to near apex, where it is roundedly notched on dorsal margin forming a slender apex one-fourth its length which is blunt at tip. Aedeagus rather broad in lateral view, shaft appearing narrow in ventral view, apex pointed. Pygofer narrowed at apex and rounded.

Holotype male.—La Jolla, Panama, Sept. 7, 1951, F. S. Blanton, collector. *Paratypes*.—1 male, same as holotype except March 18, 1953; 1 male, Pacora, R. P. Panama, Sept. 29, 1952,

F. S. Blanton; 1 male, Chepo, Panama, Sept. 25, 1952, Blanton; 1 male, Huilesta Clara, Panama, Oct. 13, 1952, Blanton; 2 males, Barro Colo., May 24, 1940, and Apr. 8, 1941, Jas. Zetek. Holotype (USNM type 67390) and paratypes in the U. S. National Museum Collection. Also paratypes in the DeLong Collection.

***Acusana munda* sp. n.**

(Figs. 77-81)

Resembling *convesta* in form and general appearance but with distinct male genital structures. Length of male 7.5 mm.

Crown produced and broadly rounded, one and one-half times as wide between eyes at base as median length.

Color.—Yellow with a golden tint on crown and pronotum. Forewing appearing hyaline on costal areas.

Genitalia.—Male plates four times as long as broad, slightly narrowed at apex which is rounded. Style rather long and narrow, apical half gradually narrowed from base to a sharp pointed dorsally bent apex except for a broadened portion on ventral side of apical two-thirds. Aedeagus curved dorsally and caudally with a very short pair of processes at apex, shaft broad, tapered to apex and bearing three pairs of short, irregular, lateral spines a little beyond middle. In lateral view, appearing notched then narrowed on ventral surface at two-thirds its length. Pygofer narrowed at apex which curves dorsally and is bluntly rounded.

Holotype male.—Yepocapa, Guatemala, Aug. 1948, H. T. Dalmat, collector. Holotype in the U. S. National Museum Collection (USNM type 67396).

Remarks.—This may later prove to be one of the other species, as the asymmetrical genitalia may be due to parasitization, although no evidence of parasites is present.

***Acusana lurora* sp. n.**

(Figs. 62-66, and 84)

Resembling *hebata* in form and color but with distinct male genital structures. Length of male 7 mm, female 7.5 mm.

EXPLANATION OF PLATE I

***Acusana profusa* sp. n.**

- FIGURE 2. Ventral view of aedeagus.
- FIGURE 3. Lateral view of aedeagus.
- FIGURE 4. Dorsal view of pygofer tip.
- FIGURE 5. Ventral view of style.
- FIGURE 6. Ventral view of plate.

***Acusana rara* sp. n.**

- FIGURE 7. Ventral view of aedeagus.
- FIGURE 8. Lateral view of aedeagus.
- FIGURE 9. Ventral view of style.
- FIGURE 10. Dorsal view of pygofer tip.
- FIGURE 11. Ventral view of plate.

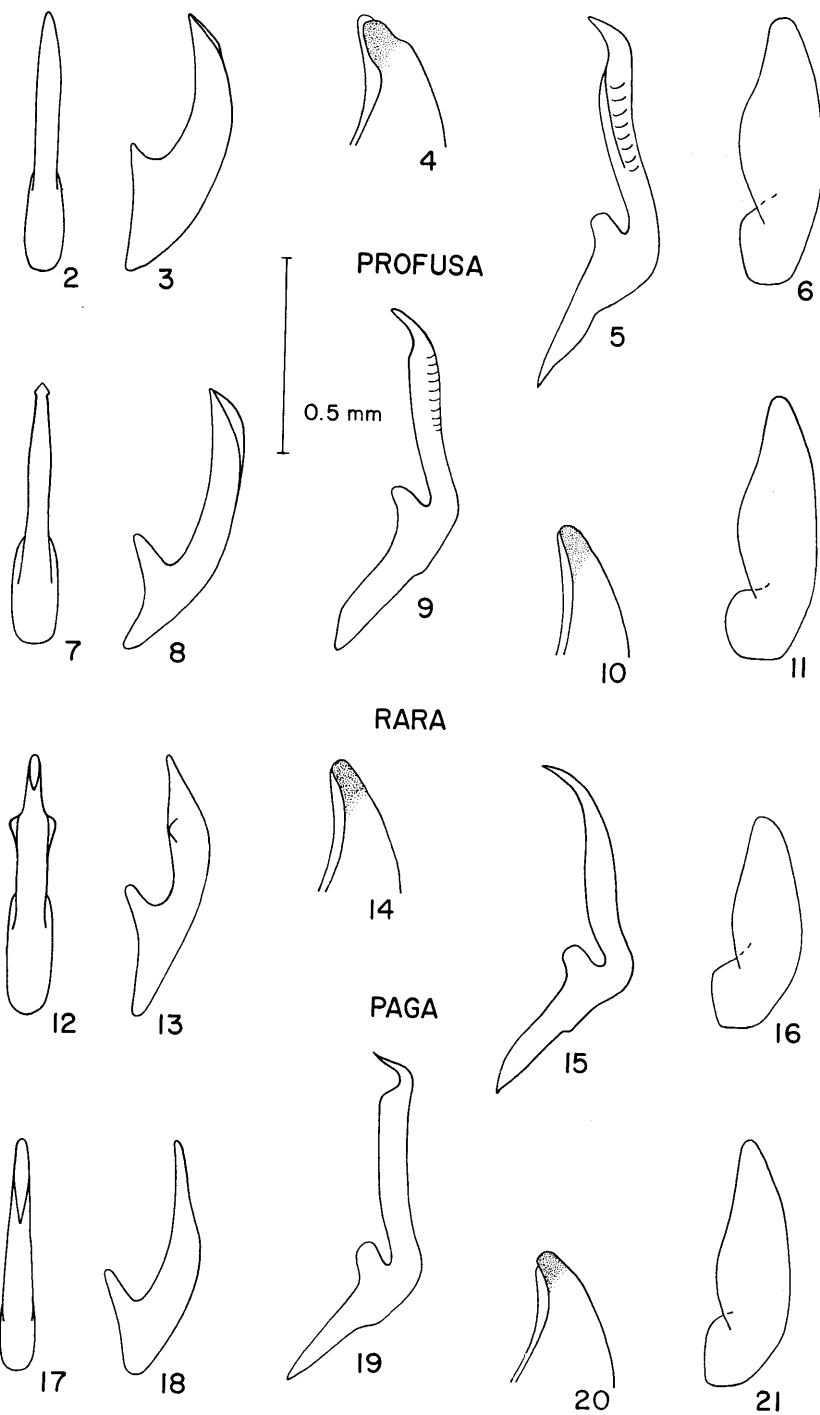
***Acusana paga* sp. n.**

- FIGURE 12. Ventral view of aedeagus.
- FIGURE 13. Lateral view of aedeagus.
- FIGURE 14. Dorsal view of pygofer tip.
- FIGURE 15. Ventral view of style.
- FIGURE 16. Ventral view of plate.

***Acusana vulgara* sp. n.**

- FIGURE 17. Ventral view of aedeagus.
- FIGURE 18. Lateral view of aedeagus.
- FIGURE 19. Ventral view of style.
- FIGURE 20. Dorsal view of pygofer tip.
- FIGURE 21. Ventral view of plate.

All drawn to the same scale.



Crown broadly roundedly produced, one and one-half times as wide between eyes at base as median length.

Color.—Golden brownish tinted with yellow. Margin of crown with a narrow black line. A narrow white band extends between the eyes just above margin. Lateral margins of pronotum with a narrow yellow band. Costal areas of forewings pale yellow.

Genitalia.—Female seventh sternum with posterior margin broadly, shallowly, concavely, excavated between the lateral angles. Male plates four times as long as broad, slightly narrowed at apex which is rounded. Style long, apical half parallel margined at base, then broadened by the convexly rounded, ventral margin, narrowed at apex to form a sharp-pointed tip which is bent dorsally. Aedeagus with shaft rather long, narrow in ventral view, bearing two pairs of rather short, lateral processes. One pair is at three-fourths the length of shaft and one pair is at apex. Pygofer narrowed at apex with a short, narrow, terminal process which extends dorsally.

Holotype male.—Galeta Pt., Panama, Dec. 29, 1956, F. S. Blanton, collector. *Allotype female*.—Mojinga Swp., Panama, C. Z., Nov. 19, 1951, F. S. Blanton Collection. *Paratypes*.—8 males same data as holotype; 4 males, same data as allotype; 1 male, same as allotype except date, Jan. 15, 1953; 1 male, Ft. Gulick, Panama, C. Z., Apr. 16, 1953, F. S. Blanton, collector; 1 male, Barro Colo. Is., C. Z., Jan.-Mar. 44, Zetek, 5122; 1 female, Buyane Francaise, La Forestiere, Haut Maroni, coll. Le Mout; 1 female, San Antonio, British Honduras, June, 1931; 1 female, labeled "C. R., No. 763, C. H. Ballou coll., Costa Rica, C. A."; 1 female from Costa Rica, July 26, 1933, C. H. Ballou. Holotype (USNM type 67394) and paratypes in the U. S. National Museum Collection. Allotype and paratypes in the North Carolina State College Collection. Paratypes in the DeLong Collection.

***Acusana aperta* sp. n.**

(Figs. 67-71)

Resembling *marginella* in form and appearance but with distinct male genitalia. Length of male 8 mm.

Crown produced and rounded, three-fifths as long as basal width between eyes.

Color.—Golden yellow tinted with brown, with a narrow black line on margin and a narrow white border just above margin. Pronotum with lateral margins narrowly bordered with white.

EXPLANATION OF PLATE II

***Acusana solora* sp. n.**

- FIGURE 22. Ventral view of aedeagus.
- FIGURE 23. Lateral view of aedeagus.
- FIGURE 24. Dorsal view of pygofer tip.
- FIGURE 25. Ventral view of style.
- FIGURE 26. Ventral view of plate.

***Acusana marginella* sp. n.**

- FIGURE 27. Ventral view of aedeagus.
- FIGURE 28. Lateral view of aedeagus.
- FIGURE 29. Ventral view of style.
- FIGURE 30. Dorsal view of pygofer tip.
- FIGURE 31. Ventral view of plate.

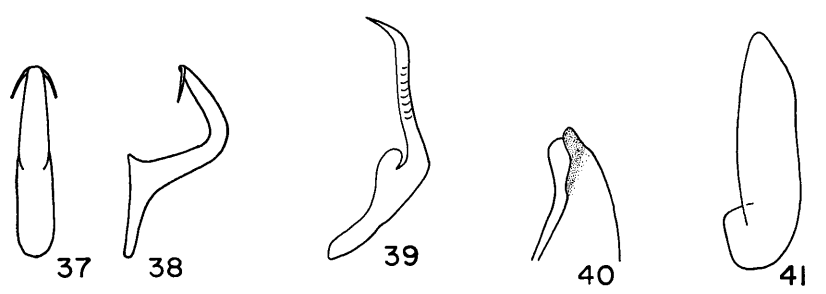
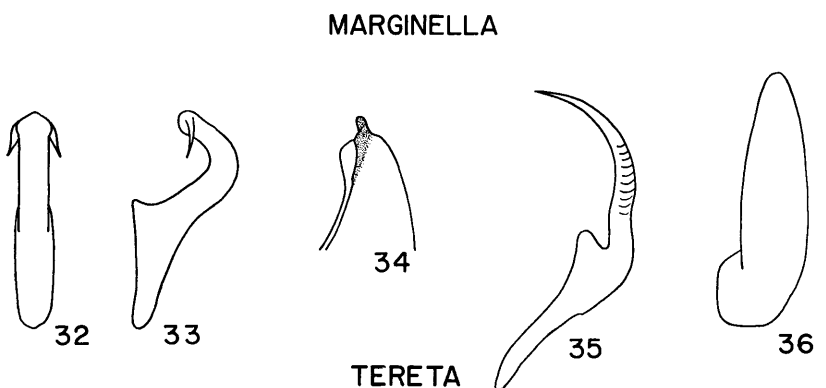
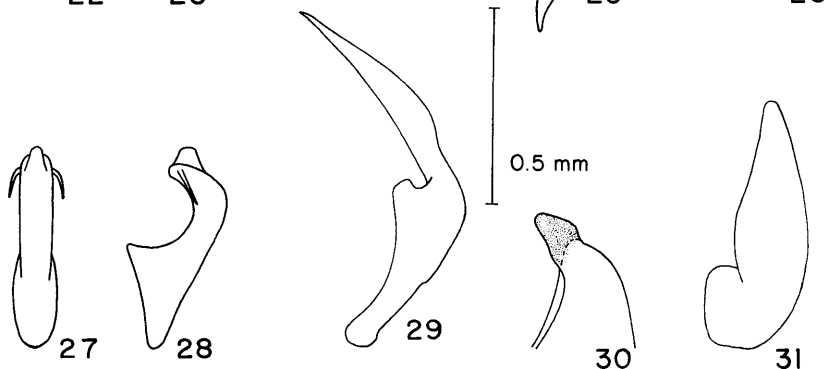
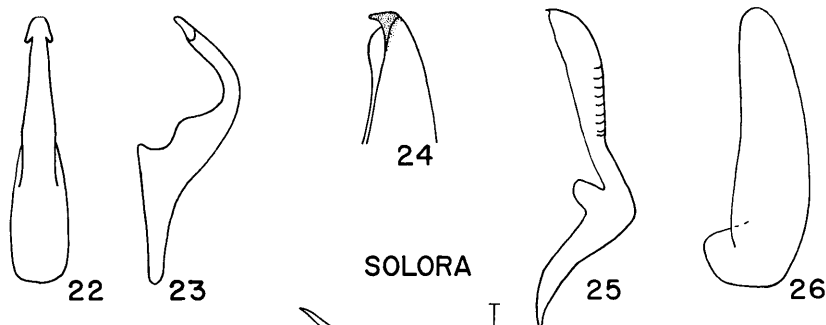
***Acusana tereta* sp. n.**

- FIGURE 32. Ventral view of aedeagus.
- FIGURE 33. Lateral view of aedeagus.
- FIGURE 34. Dorsal view of pygofer tip.
- FIGURE 35. Ventral view of style.
- FIGURE 36. Ventral view of plate.

***Acusana turba* sp. n.**

- FIGURE 37. Ventral view of aedeagus.
- FIGURE 38. Lateral view of aedeagus.
- FIGURE 39. Ventral view of style.
- FIGURE 40. Dorsal view of pygofer tip.
- FIGURE 41. Ventral view of plate.

All drawn to the same scale.



TURBA
PLATE II

Genitalia.—Male plates three times as long as wide, tapered at apex to form a narrow, blunt, rounded tip. Style abruptly enlarged at middle of apical half on ventral side then gradually tapered to a narrow pointed dorsally bent apex. Aedeagus with shaft normal in width, bearing two pairs of lateral processes. A short pair arise at apex and extend dorsally, a longer pair extending almost half the distance to base arise laterally some distance from the apical pair. Pygofer narrowed apically, blunt and rounded at tip.

Holotype male.—Vergel Chiapis, Mexico, July 2, 1935, Dr. Alfonse Dampf, at Light. Holotype in the DeLong Collection.

***Acusana aptera* sp. n.**

(Figs. 72–76)

Resembling *aperta* in form and appearance but with distinct male genital structures. Length of male 8 mm.

Crown produced and broadly rounded, one and one-half times as broad at base as median length.

Color.—Orange yellow tinted with brown, costal area of forewing yellow. A narrow black line on margin of crown. A narrow white band bordering margin of crown and bordering lateral margins of pronotum.

Genitalia.—Male plates four times as long as wide, apical portion tapered to form a narrow, rounded tip. Style with a slight, rounded enlargement on ventral side at about middle, apical portion rather rapidly narrowed, tip pointed, bent dorsally. Aedeagus with shaft normal, bearing a short process on dorsal surface at apex and a pair of longer, lateral processes arising just before apex which extends about one-third the distance to base. Pygofer narrowed apically, with a curved, blunt, rounded protrusion at apex.

Holotype male.—Vergel Chiapis, Mexico, June 9, 1935, Alfonse Dampf, collector. Holotype in the DeLong Collection.

***Acusana frondosa* DeLong**

(Figs. 120–122)

Acusana frondosa DeLong, 1942: 63.

A yellowish species with orange stripes. Length of male 8 mm, female 8.5 mm.

EXPLANATION OF PLATE III

***Acusana hebета* sp. n.**

- FIGURE 42. Ventral view of aedeagus.
- FIGURE 43. Lateral view of aedeagus.
- FIGURE 44. Dorsal view of pygofer tip.
- FIGURE 45. Ventral view of style.
- FIGURE 46. Ventral view of plate.

***Acusana convesta* sp. n.**

- FIGURE 47. Ventral view of aedeagus.
- FIGURE 48. Lateral view of aedeagus.
- FIGURE 49. Ventral view of style.
- FIGURE 50. Dorsal view of pygofer tip.
- FIGURE 51. Ventral view of plate.

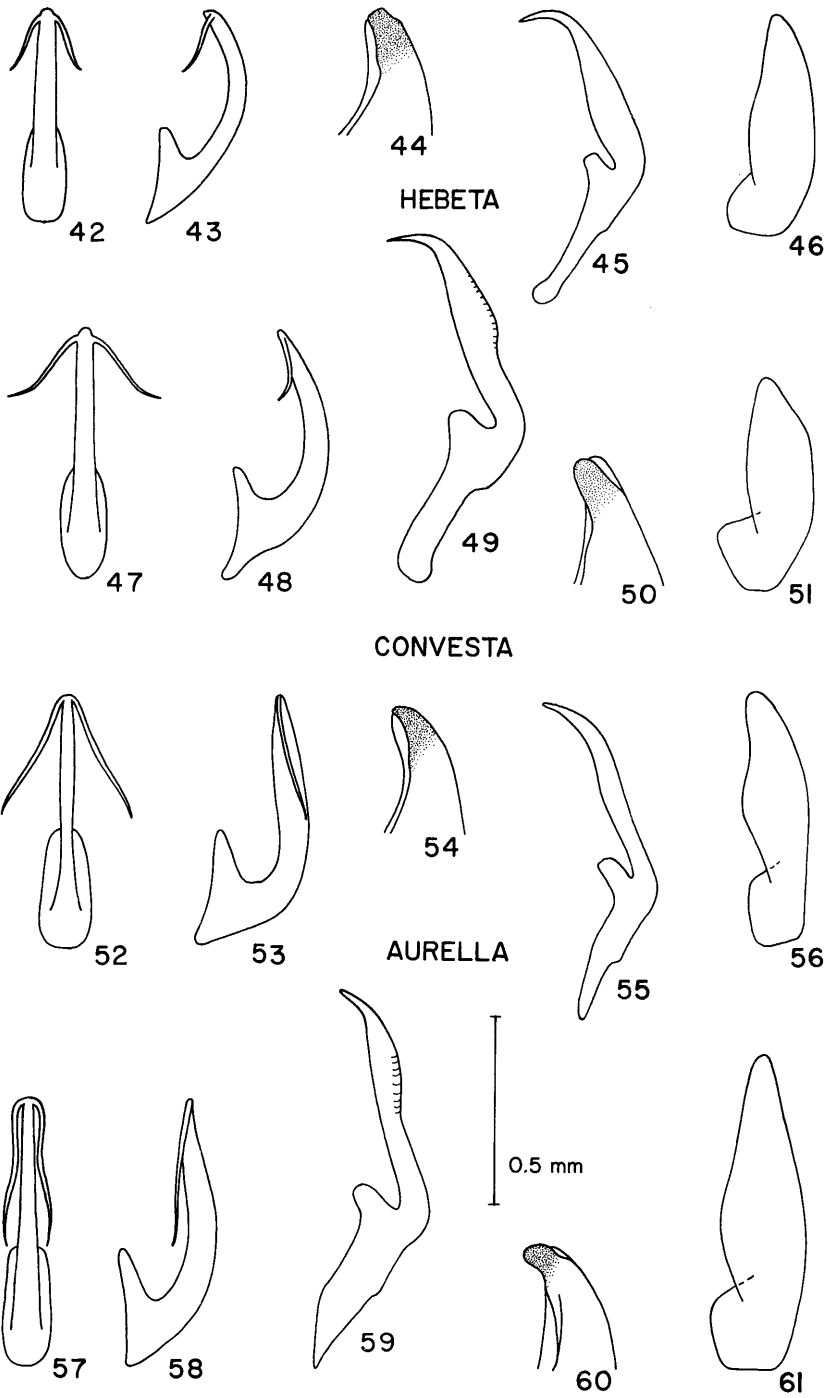
***Acusana aurella* sp. n.**

- FIGURE 52. Ventral view of aedeagus.
- FIGURE 53. Lateral view of aedeagus.
- FIGURE 54. Dorsal view of pygofer tip.
- FIGURE 55. Ventral view of style.
- FIGURE 56. Ventral view of plate.

***Acusana prona* sp. n.**

- FIGURE 57. Ventral view of aedeagus.
- FIGURE 58. Lateral view of aedeagus.
- FIGURE 59. Ventral view of style.
- FIGURE 60. Dorsal view of pygofer tip.
- FIGURE 61. Ventral view of plate.

All drawn to the same scale.



Crown broadly produced, appearing almost angular with rounded tip at apex, more than half as long at middle as basal width between the eyes.

Color.—Yellowish tinged with orange and green, appendix of forewings black on overlapping margins. Orange stripes on crown, pronotum, and scutellum, the central proximal pair more conspicuous.

Genitalia.—Female seventh sternum broadly, concavely rounded on posterior margin. Male style rather broad on apical half, rapidly narrowed at apex to a sharp-pointed tip. Aedeagus short, broad in lateral view, appearing slender in ventral view with a pair of long, slender apical processes extending laterally more than half the length of the ventral aedeagus shaft.

Type.—Holotype from Arizona, in the DeLong Collection.

Remarks.—It has been collected in Arizona and Utah.

***Acusana tereta* sp. n.**

(Figs. 32–36)

Resembling *aurella* in form and appearance but with distinct male genital structures. Length of male 7 mm.

Crown produced and broadly rounded, almost twice as wide between eyes at base as median length.

Color.—Golden yellow tinged with brown, a narrow black line on margin of crown.

Genitalia.—Male plates three and one-half times as long as wide, apical fourth tapered to form a narrowed, rounded tip. Style with apical half rather long and narrow, curving dorsally, and tapered to a narrow pointed apex. Aedeagus short, broad, apical third bent strongly dorsally and bearing a pair of short, thick, lateral processes which arise just before apex. Pygofer narrowed at apex with a short, narrow, terminal process.

Holotype male.—Kingston, Jamaica, April, 1906, Van Duzee Collection. Holotype in the California Academy of Science Collection.

***Acusana tympana* DeLong**

(Figs. 103–107)

Acusana tympana DeLong, 1942: 63.

A yellowish unmarked species. Length of male 8 mm, female 8.5 mm.

EXPLANATION OF PLATE IV

***Acusana lurora* sp. n.**

- FIGURE 62. Ventral view of aedeagus.
- FIGURE 63. Lateral view of aedeagus.
- FIGURE 64. Dorsal view of pygofer tip.
- FIGURE 65. Ventral view of style.
- FIGURE 66. Ventral view of plate.

***Acusana aperta* sp. n.**

- FIGURE 67. Ventral view of aedeagus.
- FIGURE 68. Lateral view of aedeagus.
- FIGURE 69. Ventral view of style.
- FIGURE 70. Dorsal view of pygofer tip.
- FIGURE 71. Ventral view of plate.

***Acusana aptera* sp. n.**

- FIGURE 72. Ventral view of aedeagus.
- FIGURE 73. Lateral view of aedeagus.
- FIGURE 74. Dorsal view of pygofer tip.
- FIGURE 75. Ventral view of style.
- FIGURE 76. Ventral view of plate.

***Acusana munda* sp. n.**

- FIGURE 77. Ventral view of aedeagus.
- FIGURE 78. Lateral view of aedeagus.
- FIGURE 79. Ventral view of style.
- FIGURE 80. Dorsal view of pygofer tip.
- FIGURE 81. Ventral view of plate.

All drawn to the same scale.

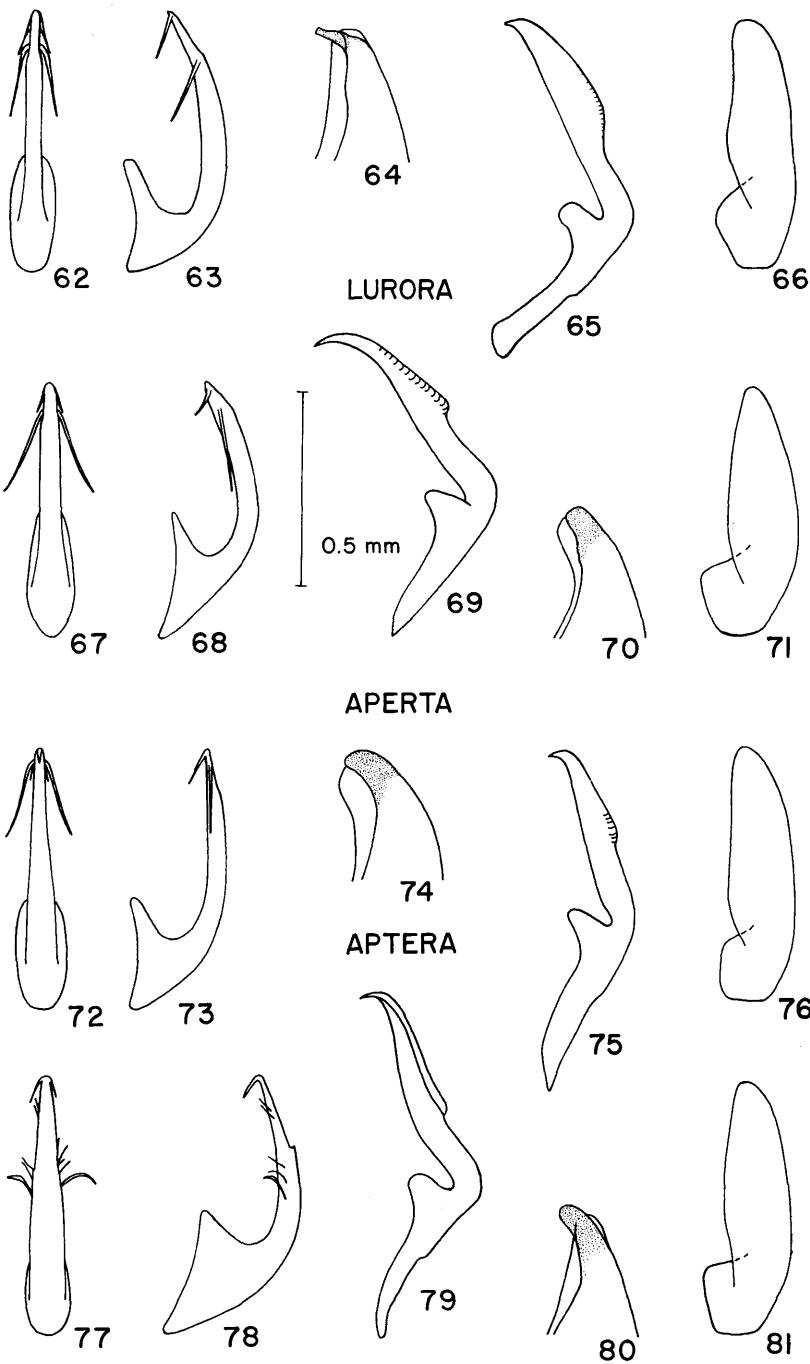


PLATE IV

Crown broadly produced, apex rounded, more than half as long at middle as basal width between eyes.

Color.—Dull yellowish without markings.

Genitalia.—Female seventh sternum broadly, angularly excavated, slightly notched at middle. Male style decidedly broadened at about one-half its length by a rounded, ventrally produced, serrate-margined protrusion beyond which the apical portion is slender and concavely excavated on dorsal margin to form a sharp-pointed apex. Aedeagus tapered toward apex with a pair of apical lateral processes arising at apex and curving laterally and basally about one-fourth the distance to the base of the aedeagus shaft.

Type.—Holotype male from New Mexico, in the DeLong Collection.

Remarks.—Specimens have been collected in New Mexico, Arizona, and Utah.

Acusana prostrata DeLong

(Figs. 111–113)

Acusana prostrata DeLong, 1942: 59.

A yellowish species related to *veprecula*. Length of male 8 mm, female 9 mm.

Crown bluntly angularly produced, not quite half as long at middle as basal width between eyes.

Color.—Pale yellow washed with orange, appendix of forewings smoky.

Genitalia.—Female seventh sternum with posterior margin shallowly concavely rounded on median half. Male style broadened at about one-half its length by a produced serrate ventral portion. Decidedly narrowed just before apex by a broad, concave excavation on dorsal surface from which the apex is tapered to a sharp-pointed, dorsally curved tip. Aedeagus tapered toward apex with a pair of short, lateral processes arising at apex which extend almost horizontally.

Type.—Holotype male from Arizona, in the U. S. National Museum Collection.

Remarks.—The species is known to occur in Arizona and Utah.

Acusana generosa DeLong

(Figs. 114–116)

Acusana generosa DeLong, 1942: 59.

Resembling *veprecula* in form and general appearance but broader and with distinct genitalia. Length of male 8 mm, female 9 mm.

Crown broadly, roundedly produced, more than half as long at middle as basal width between eyes.

Color.—Dull yellowish tinged with green.

Genitalia.—Female seventh sternum with lateral angles produced and rounded between which the posterior margin is slightly concavely rounded to a pair of slightly produced, convexly rounded lobes separated by a slight, broad notch. Male style broadened at about half its length by a produced ventral serrate margin. Rapidly narrowed at apex on ventral margin to a sharp-pointed apex which is curved dorsally. Aedeagus narrowed on apical half with a pair of processes arising at apex and curving laterally, extending basally one-third the distance of the shaft of aedeagus.

Type.—Holotype male from Arizona in the DeLong Collection.

Remarks.—This species has been collected in Arizona, Colorado, and Texas.

Acusana veprecula DeLong

(Figs. 117–119)

Acusana veprecula DeLong, 1942: 58.

A small species without markings on crown and pronotum. Length of male 7 mm, female 8 mm.

Crown roundedly produced, a little more than half as long at middle as basal width between eyes.

Color.—Dull yellowish without definite markings except smoky on inner apex of forewings.

Genitalia.—Female seventh sternum broadly, convexly rounded either side of a short, rather

broad median notch. Male style broadened at about one-third its length by a produced serrate ventral enlargement. Narrowed near apex by a shallowly, concavely rounded excavation on dorsal margin to a sharply pointed apex which is curved dorsally. Aedeagus tapered to apex with a pair of short lateral processes arising at apex which extend almost transversely.

Type.—Holotype male from Arizona in the DeLong Collection.

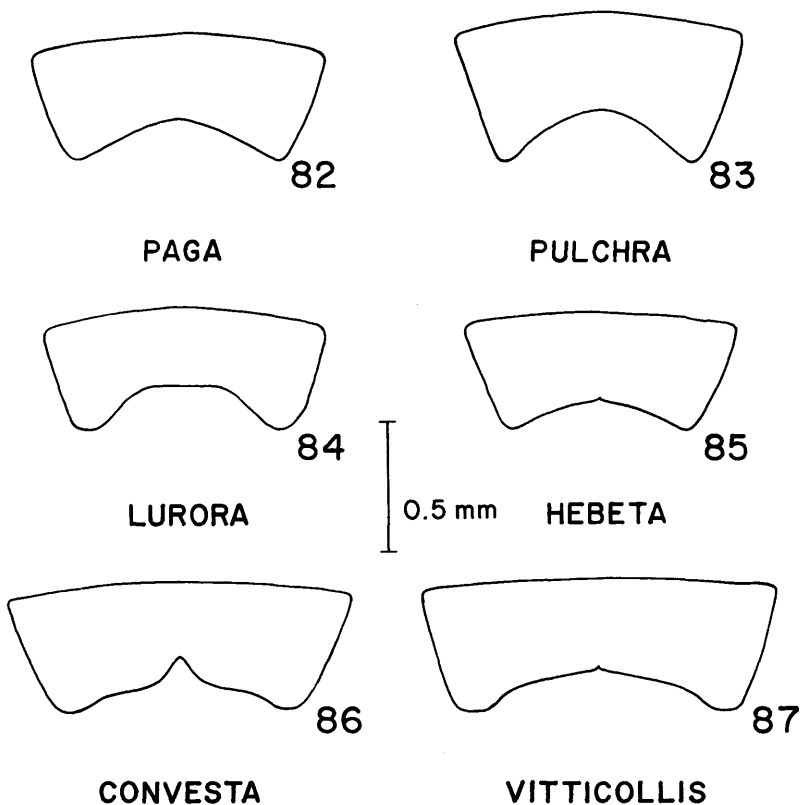
Remarks.—This species is known only from Arizona collections.

Acusana meditabunda (Spangberg)

(Figs. 108–110)

Gypona meditabunda Spangberg, 1878: 39.

A yellowish species related to *octolineata*. Length of male 7.5 mm, female 9 mm.



Crown broadly rounded, almost twice as wide between eyes at base as median length.

Color.—Pale yellowish tinged with orange-yellow.

Genitalia.—Female seventh sternum with posterior margin broadly, shallowly concave between rounded lateral angles, slightly notched at middle. Male style with a protruded, rounded, serrated, curved portion on ventral surface. At about half its length it is gradually

tapered to apical sixth which is abruptly narrowed, elongated, and sharply pointed at apex. Aedeagus with a pair of lateral processes arising just before apex, curved basally and produced one-third the distance of aedeagus shaft.

Type.—Holotype male from Texas, in Stockholm Museum.

Remarks.—Only specimens from Texas have been observed.

Acusana rota DeLong

(Figs. 93–97)

Acusana rota DeLong, 1942: 60.

A yellowish species resembling *prostrata*. Length of male 8 mm, female 8.5 mm.

Crown rather broadly roundedly produced, almost twice as wide between eyes at base as median length.

Color.—Yellowish washed with orange, apices of forewings smoky.

Genitalia.—Female seventh sternum rather broadly, evenly, concavely rounded. Male style with apical half rather abruptly broadened for a short distance by a curved produced protusion on ventral margin. Beyond this the apical third is gradually narrowed to a narrow, sharp-pointed tip which is slightly, broadly notched in dorsal surface just before the apex. Aedeagus with a pair of rather long, slender apical processes which curve basally almost halfway to base with the apices curved laterally.

Type.—Holotype male from Arizona, in the DeLong Collection.

Remarks.—This species known from Arizona only.

Acusana turba sp. n.

(Figs. 37–41)

Resembling *profusa* in general form but with distinct male genital structures. Length of male 7 mm.

Crown broadly roundedly produced, more than half as long at middle as basal width between eyes.

Color.—Pale dull yellow with indications of the black slender line on margin of crown and

EXPLANATION OF PLATE VI

Acusana teres DeLong

- FIGURE 88. Ventral view of aedeagus.
- FIGURE 89. Lateral view of aedeagus.
- FIGURE 90. Ventral view of pygofer tip.
- FIGURE 91. Lateral view of style.
- FIGURE 92. Ventral view of plate.

Acusana rota DeLong

- FIGURE 93. Ventral view of aedeagus.
- FIGURE 94. Lateral view of aedeagus.
- FIGURE 95. Lateral view of style.
- FIGURE 96. Ventral view of pygofer tip.
- FIGURE 97. Ventral view of plate.

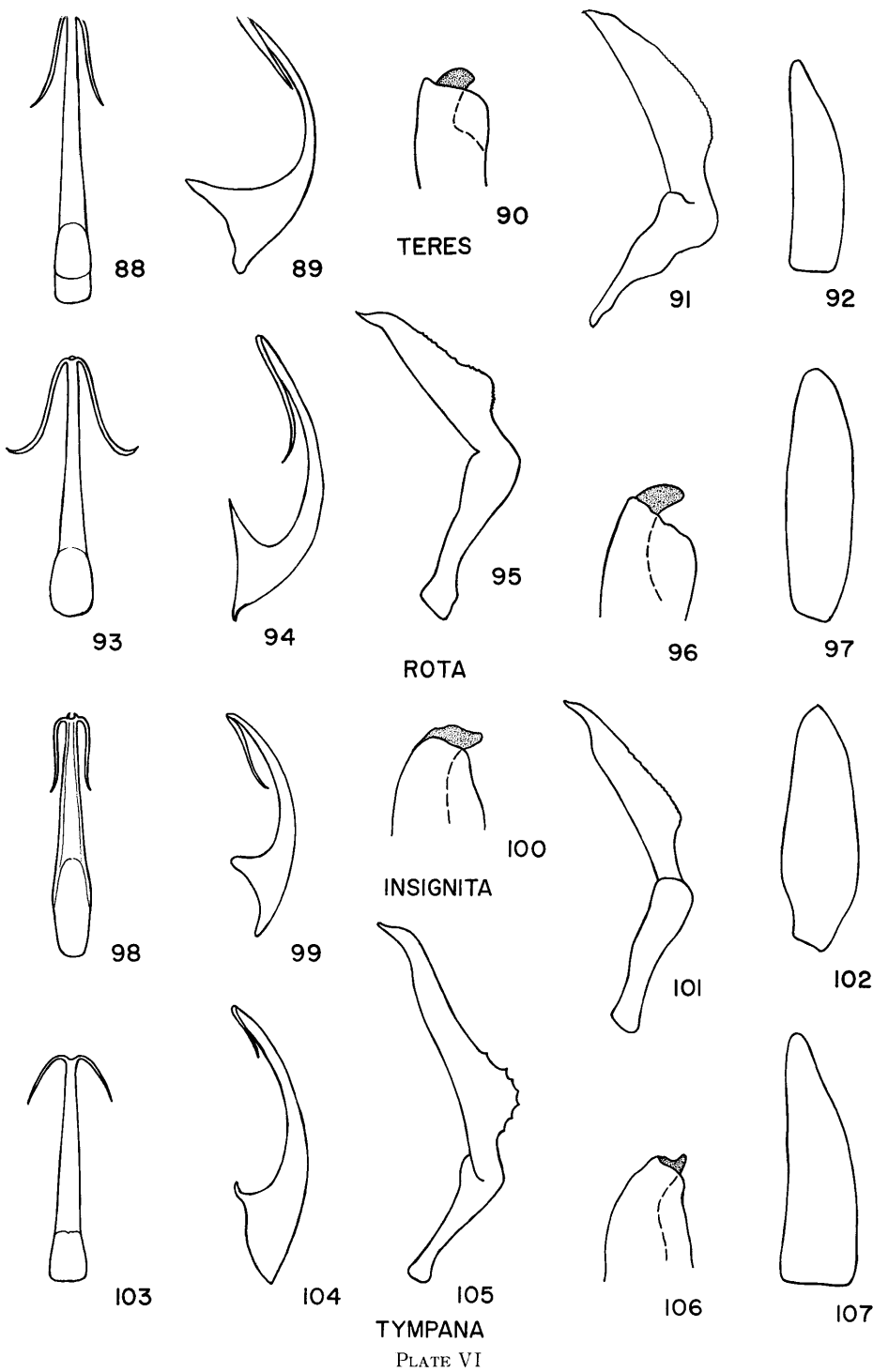
Acusana insignita DeLong

- FIGURE 98. Ventral view of aedeagus.
- FIGURE 99. Lateral view of aedeagus.
- FIGURE 100. Ventral view of pygofer tip.
- FIGURE 101. Lateral view of style.
- FIGURE 102. Ventral view of plate.

Acusana tympana DeLong

- FIGURE 103. Ventral view of aedeagus.
- FIGURE 104. Lateral view of aedeagus.
- FIGURE 105. Lateral view of style.
- FIGURE 106. Ventral view of pygofer tip.
- FIGURE 107. Ventral view of plate.

Not drawn to the same scale.



the pale band bordering margin and along lateral margins of pronotum. (The specimen has apparently been preserved in alcohol.)

Genitalia.—Male plates almost four times as long as broad, tapered on apical fourth to a bluntly pointed apex. Style long and narrow, apical half almost parallel margined to near apex where it is tapered to form a sharp pointed tip which is bent dorsally. Aedeagus sickle shaped in lateral view, shaft rather thick and bearing a pair of short, lateral processes at apex. Pygofer narrowed at apex with a short, blunt, rounded, apical process.

Holotype male.—Milk River, Jamaica, Feb. 25, 1937, Sta. 415, Chapin and Blackwelder. Holotype in the U. S. National Museum Collection (USNM type 67388).

***Acusana marginella* sp. n.**

(Figs. 27–31)

Resembling *insignita* in general form but with different coloration and distinct male genital structures. Length of male 8 mm; female 8 mm.

Crown flattened, produced and bluntly rounded, one and one-half times as wide at base as median length, thin and almost foliaceous.

Color.—Orange yellow tinted with brown, a narrow white band extending along margin between eyes and along the lateral margins of the pronotum. Crown with a fine black line on margin. Forewings unicolorous, veins indistinct.

Genitalia.—Female seventh sternum broadly concave, redundant between lateral angles. Male plates elongate, three times as long as broad, apical half tapered to a narrow, rounded tip. Style long and narrow, apical half narrow, slightly enlarged and rounded on ventral margin, tapered to a narrow, sharp-pointed apex. Aedeagus in lateral view, short and thick, curved dorsally, bearing a small apical keel on the caudal margin and a pair of short, lateral processes subapically. Pygofer narrow with a prominent, blunt, apical process.

Holotype male.—Tamazunchale, Mexico, Nov. 15, 1938, J. S. Caldwell, collector. *Allotype female*.—La Ceiba, Honduras, Nov. 18, 1916, F. J. Dyer, collector, No. 15395. *Paratypes*.—1 male, Popoya, Guatemala, March 9, 1942, DeLong, collector; 1 male, same as allotype except

EXPLANATION OF PLATE VII

Acusana medilabunda (Spangberg)

FIGURE 108. Ventral view of aedeagus.

FIGURE 109. Lateral view of style.

FIGURE 110. Ventral view of pygofer tip.

Acusana prostrata DeLong

FIGURE 111. Ventral view of aedeagus.

FIGURE 112. Lateral view of style.

FIGURE 113. Ventral view of pygofer tip.

Acusana generosa DeLong

FIGURE 114. Ventral view of aedeagus.

FIGURE 115. Lateral view of style.

FIGURE 116. Ventral view of pygofer tip.

Acusana veprecula DeLong

FIGURE 117. Ventral view of aedeagus.

FIGURE 118. Lateral view of style.

FIGURE 119. Ventral view of pygofer tip.

Acusana frondosa DeLong

FIGURE 120. Ventral view of aedeagus.

FIGURE 121. Lateral view of style.

FIGURE 122. Ventral view of pygofer tip.

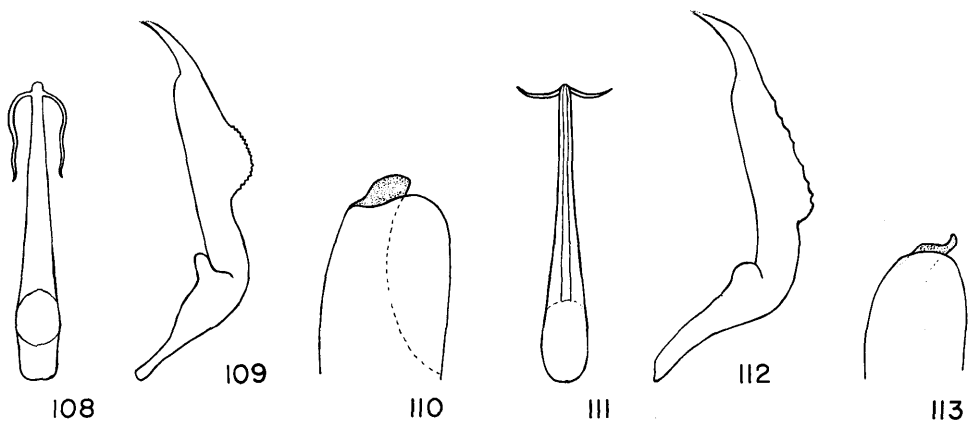
Acusana condensa DeLong

FIGURE 123. Ventral view of aedeagus.

FIGURE 124. Lateral view of style.

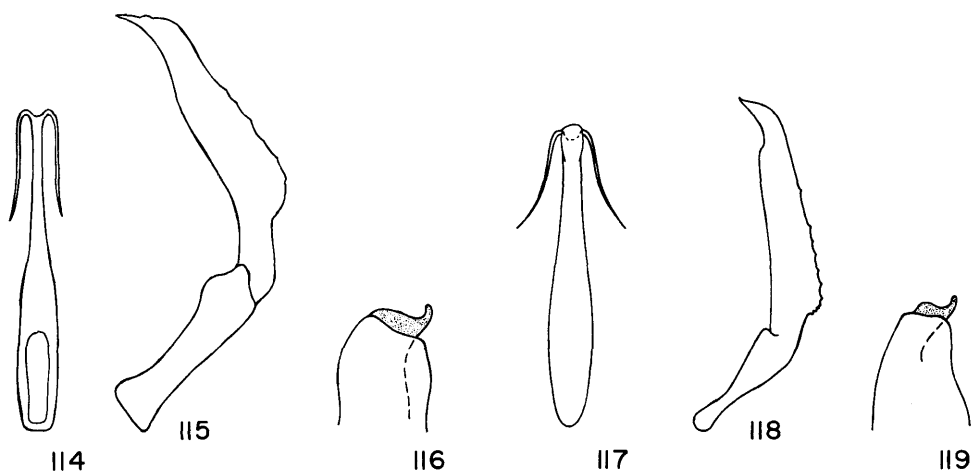
FIGURE 125. Ventral view of pygofer tip.

Not drawn to the same scale.



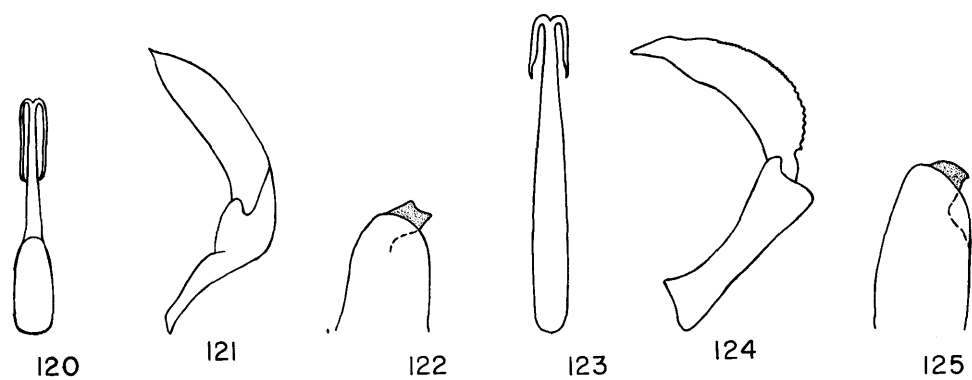
MEDITABUNDA

PROSTRATA



GENEROSA

VEPRECULA



FRONDOSA

CONDENSA

USNM 21801-70 without date; 1 male, same as allotype; 1 male, same locality, Dec. 25, 1915, J. F. Dyer, collector, No. 3182; 1 male, Punta Gorda, Br. Honduras, 1934, John L. Buys Collection. Holotype and paratype in the DeLong Collection. Allotype and paratypes in the U. S. National Museum Collection.

Acusana condensa DeLong

(Figs. 123-125)

Acusana condensa DeLong, 1942: 62.

A yellowish green species. Length of male 7 mm, female 7.5 mm.

Crown appearing angularly produced, apex rounded, a little more than half as long at middle as basal width between eyes.

Color.—Dull yellowish green.

Genitalia.—Female seventh sternum with lateral angles rounded between which the posterior margin is shallowly, roundedly emarginate with a slight notch at center. Male style with apical half strongly convexly curved and serrate on ventral margin, concavely sinuately curved on dorsal margin, slightly notched on each margin just before pointed apex. Aedeagus with a pair of very short, heavy, curved apical processes which extend basally and are tapered to pointed apices. Plate rather long, gradually tapered to a bluntly pointed apex.

Type.—Holotype male from Arizona, in the DeLong Collection.

Remarks.—It is known from Arizona only.

Acusana aurella sp. n.

(Figs. 52-56)

Resembling *marginella* in form and general appearance but paler in color and with distinct male genital structures. Length of male 7 mm.

Crown roundedly produced, about one-fourth wider between eyes at base than median length.

Color.—Dull yellowish tinged with pale brown and on costal area of forewings, with green. A black, narrow line is on margin of crown.

Genitalia.—Male plates more than three times as long as wide, tapered to half its median width at apex which is blunt and rounded. Style long, very slender, apex narrowed and curved slightly dorsally. Aedeagus broad in lateral view, shaft appearing narrow in ventral view, bearing a pair of slender, lateral processes at apex which extend more than half way to base. Pygofer narrowed at apex and produced into a blunt, terminal process.

Holotype male.—Labeled "Panama, Mojinga Swp., C. Z., 27-XI-1951, F. S. Blanton collector". *Paratypes*.—1 male, same data as holotype; 5 males, same data except one each collected, Aug. 23, 1951, August 28, 1951, June 25, 1952, and 2 labeled June 17, 1952. Holotype (USNM type 67386) and paratypes in the U. S. National Museum Collection, paratypes in the DeLong Collection.

Acusana prona sp. n.

(Figs. 57-61)

Resembling *aurella* in form and appearance but with distinct male genital structures. Length of male 7.5 mm, female 7.5 mm.

Crown broadly roundedly produced, one and one-half times as wide between eyes at base as median length.

Color.—Orange yellow tinted with brown. A narrow black line on margin of crown, and a narrow white band bordering margin and lateral margins of pronotum. Costal area of forewings paler yellow than claval area.

Genitalia.—Female seventh sternum with posterior margin broadly, shallowly, concavely excavated between the lateral angles. Male plates almost four times as long as wide, apical portion narrowed to form a narrow rounded tip. Style elongate, narrow, broadened on apical third, then narrowed to form a slender, bluntly pointed tip. Aedeagus rather long, shaft narrow, in ventral view, with a pair of long, lateral processes arising at apex which extends more than half way to base of shaft. Pygofer narrowed apically and curved dorsally with a rounded apex.

Holotype male.—Labeled "Waldeck, Costa Rica, 763, 6-10-36, collected on cacao, S. & C. H.

Ballou". *Allotype female*.—Porto Bello, Panama, 6 miles East, XX Plantation, Feb. 4, 1930, T. O. Zachokke, collector. *Paratypes*.—2 males, same data as holotype; 1 male, same data as allotype. Holotype (USNM type 67391) and paratype in the U. S. National Museum Collection. Allotype and paratype in the California Academy of Science Collection. Paratype in the DeLong Collection.

Acusana teres DeLong

(Figs. 88–92)

Acusana teres DeLong, 1942: 61.

A yellowish species with black on forewings. Length of male 8 mm, female 9 mm.

Crown strongly rather angularly produced; apex rounded, about two-thirds as long at middle as basal width between the eyes.

Color.—Yellowish ringed with orange, a black margin on appendix of forewing where it overlaps posterior to clavus.

Genitalia.—Female seventh sternum with lateral angles broadly rounded between which the posterior margin is broadly rather shallowly, angularly excavated. The sides of this notch are slightly sinuate. Male style with dorsal margin of apical half almost straight, ventral margin convexly rounded and serrate to form a sharp-pointed apex. Aedeagus tapered toward apex with a pair of apical processes curved laterally, extending basally one-third the distance of aedeagus shaft. Plate long, narrow, curved on outer apical margin to form a blunt apex.

Type.—Holotype male from California, in the DeLong Collection.

Acusana insignita DeLong

(Figs. 98–102)

Acusana insignita DeLong, 1942: 60.

A greenish yellow species with black on forewings. Length of male 6.5 mm, female 7 mm.

Crown broadly rounded and produced, a little more than half as long at middle as basal width between the eyes.

Color.—Dull yellow tinged with green, inner apical margin of forewings black.

Genitalia.—Female seventh sternum with posterior margin slightly concavely sinuate, either side of a short, broad median notch. Male style gradually broadened at about one-half its length by a produced ventral serrated margin, then gradually tapered to a bluntly pointed apex partly formed by a broad, shallow excavation on dorsal surface. Aedeagus broad with a pair of processes arising at apex, curved laterally and produced basally about one-third the length of aedeagus.

Type.—Holotype male from Arizona, in the DeLong Collection.

Remarks.—It has been collected only in Arizona.

Acusana fastigor DeLong

Acusana insignita var. *fastigor* DeLong, 1942: 61.

A green species larger than but related to *insignita*. Length of male 7 mm, female 7.5 mm.

Crown broadly, bluntly produced, almost one-half as long at middle as basal width between the eyes.

Color.—Bright green tinged with yellow, veins of forewings dark green and appendix smoky.

Genitalia.—Female seventh sternum with posterior margin sinuate, slightly notched at middle. Male aedeagus similar to that of *insignita* with a pair of slender apical processes directed basally. Style with dorsal margin straight, ventral margin strongly convexly rounded near base, then gradually sloping to narrow, pointed apex. The pygofer spine is flat as in *insignita*.

Type.—Holotype male from California, in the DeLong Collection.

Remarks.—This species has been collected only in California.

Acusana hebeta sp. n.

(Figs. 42–46, and 85)

Resembling *aurella* in general form and appearance but with distinct male genital structures. Length of male 7 mm, female 8 mm.

Crown produced, broadly rounded, one and one-half times as wide between eyes at base as median length, flattened, margin thin.

Color.—Orange yellow tinted with brown. A narrow black line on margin of crown. Crown and lateral margins of pronotum narrowly bordered with white.

Genitalia.—Female seventh sternum with posterior margin broadly, shallowly, concavely, rounded between the lateral angles. Male plates three times as long as broad, apical half tapered to a bluntly rounded apex. Styles long and narrow with apical half slightly broadened near base by convexly rounded dorsal margin, then gradually narrowed to a slender pointed apex which is curved sharply dorsally on apical sixth. Aedeagus elongate, shaft medium in width and bearing a pair of rather short, slender processes near apex which extend about one-fourth the distance to base. Pygofer narrowed at apex and with a blunt apical process.

Holotype male.—Mojinga Swp., Panama, C. Z., Nov. 26, 1951, F. S. Blanton, collector. *Allotype female*.—Same data as holotype. *Paratypes*.—2 males, same data as holotype; 2 males and 6 females, same locality, Jan. 15, 1953, Blanton, collector; 4 males, Punta Gorda, Br. Honduras, 2 dated May, 1934, 1 dated June, 1934, and 1 dated Aug., 1934, John L. Buys Collection; 1 male and 1 female, Morales, Guat., Sept., 1928, J. J. White; 4 males, Columbia, British Honduras, April, 1932; 2 males, Rio Temas, British Honduras, Sept., 1927, A. J. White. Holotype (USNM type 67393) allotype, and paratypes in the U. S. National Museum Collection. Also paratypes in the North Carolina State College Collection and in the DeLong Collection.

***Acusana convesta* sp. n.**

(Figs. 47–51, and 86)

Resembling *lurora* in form, appearance, and coloration but with distinct male genital structures. Length of male 7.5 mm, female 8 mm.

Crown produced and broadly rounded, almost one and one-half times as wide between eyes at base as median length.

Color.—Golden yellow tinted with brown. A black line on margin of crown and a narrow white marginal band just above margin of crown and bordering the lateral margins of the pronotum.

Genitalia.—Female seventh sternum with posterior margin sloping from each lateral angle to form a rather broad, short, V-shaped notch at middle which extends about one-third the distance to base. Male plates about three times as long as broad, apical third tapered to form a bluntly pointed apex. Styles long and rather narrow. Apical half slightly broadened at middle, then narrowed to form a slender, pointed apex which is bent dorsally on the apical fifth. Aedeagus curved dorsally and bearing a pair of long, slender, lateral processes at apex which are about one-third the length of shaft. Pygofer narrowed and rounded at apex.

Holotype male.—Bartica, Br. Guiana, May, 1920. *Allotype female*.—Same locality as holotype, but dated June 1. Holotype (USNM type 67395) and allotype in the U. S. National Museum Collection.

***Acusana pulchra* (Spangberg)**

(Fig. 83)

Gypona pulchra Spangberg, 1878: 32.

A golden yellow species with a broadly rounded head. Length of female 8 mm.

Crown broadly, roundedly produced, almost four-fifths as long as basal width between eyes.

Color.—Golden yellow, crown with a narrow dark band on margin, a white band just above margin extending across eyes and along lateral margins of pronotum. Forewings uniform golden yellow except outer half of costa and apical cells which are hyaline.

Genitalia.—Female seventh sternum narrow with rounded lateral angles between which the posterior margin is broadly, rather deeply, concavely excavated one-third the distance to base.

Holotype female.—Labeled "Bogota, Lindig" and is in the Stockholm Museum.

Remarks.—Through the kindness of Dr. Eric Kjellander the type specimen has been studied and the seventh sternum illustrated. One female paratype labeled the same as the holotype is also this species; the remaining 4 paratypes belong to the genus *Gypona*. No known males have been observed.

Acusana vitticollis (Spangberg)
(Fig. 87)

Gypona vitticollis Spangberg, 1878: 33.

A pale yellow species with a broadly rounded head. Length of female 8 mm.

Crown broadly, roundedly produced, more than three-fifths as long at middle as basal width.

Color.—Pale yellow, tinged with orange on pronotum and scutellum. Ocelli red.

Genitalia.—Female seventh sternum broad with rounded lateral angles between which the posterior margin is broadly, shallowly excavated, about one-third the distance to base and is minutely notched at center.

Holotype female.—Labeled "Columbia" and is in the Stockholm Museum.

Remarks.—Through the kindness of Dr. Eric Kjellander the type specimen has been studied and the seventh sternum illustrated. No males have been observed.

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